## **ABSTRACT**

Methods for increasing the levels of isoflavones in plants are provided. The method comprise applying a biologically effective amount of composition comprising a select nuclear receptor ligand to the plant. Compositions for inducing the production of isoflavones in plants are also provided. Such compositions comprise one or preferably, a combination of the select nuclear receptor ligands. The compositions also comprise a compound that enhances the capacity of the plant to release daidzein and/or utilize it for the production of glyceollin. The action of such a compound is complementary to that of the nuclear receptor ligand.